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FIBER QUALITY AND GINNING AND SPINNING PERFORMANCE OF NEW HIGH-QUALITY COTTONS, SOUTHEASTERN AREA, 1967 AND 1968 CROP YEARS

By W. E. GARNER, *agricultural engineer*, and E. H. SHANKLIN, *supervisory cotton technologist, Agricultural Research Service;* and P. E. LAFERNEY, *agricultural economist, Economic Research Service*

SUMMARY

Studies were conducted at the Southeastern Cotton Ginning Research Laboratory, Clemson, S.C., in 1967 and 1968 to determine the ginning performance, fiber quality, and spinning performance of new high-quality varieties in the Southeast. Fifteen bales each of Atlas 67 from Georgia, Coker 413 from South Carolina, and TH–149 from North Carolina were tested in 1967. Adverse weather and harvesting conditions contributed to relatively high lint trash contents and low grades, especially for the Coker 413 and TH–149.

Grades ranged from Below Grade to Strict Low Middling. Staples ranged from $1\frac{1}{32}$ to $1\frac{3}{32}$ inch. Fiber moisture, which was not a variable, was controlled between 6.1 and 6.5 percent at the feeder apron. The five ginning treatments ranged from minimum seed-cotton cleaning with no lint cleaning to moderate seed-cotton cleaning with two lint cleaners. Between these extremes, feeder-trash content varied from 3.6 to 3.0 percent, respectively.

Grade index ranged from 70.3 to 89.4, staple length from 34.1 to 34.7 thirty-seconds of an inch, bale weight from 503.2 to 462.2 pounds, unit lint price from 15.06 to 19.75 cents (CCC) and from 18.74 to 23.77 cents (Market) per pound. Bale values were approximately $16.00 higher for the maximum-ginning treatment, based on both CCC and Market prices.

Decreases in Fibrograph span lengths were statistically significant, but the total range was only 0.016 inch for 2.5-percent span length and 0.022 inch for 50-percent span length.

Additional cleaning influenced measurements of lint foreign-matter and color, as lint foreign-matter varied from 12.1 to 4.3 percent, and reflectance varied from 67.8 to 73.3 between minimum and maximum cleaning during ginning.

In the 1967-crop tests, increased gin processing showed very little effect on fiber quality. Spinning performance of cotton processed by the maximum-ginning treatment was comparable to that with the minimum treatment, except for slightly lower break factor and yarn appearance. As the amount of gin cleaning increased, yarn irregularity increased slightly.

In 1968, 15 bales of Atlas 68 from Georgia, Coker 413 from Georgia, and TH–149 from North Carolina were tested. As in 1967, adverse weather and harvesting conditions contributed to relatively high lint trash contents and corresponding low grades, especially for the Atlas 68 and TH–149.

Grades ranged from Below Grade to Strict Low Middling. Staples ranged from $1\frac{1}{16}$ to $1\frac{1}{8}$ inch. Fiber moisture was controlled between 6.1 and 6.3 percent at the feeder apron. The five ginning treatments were the same as those used in 1967. Feeder-trash content varied from 3.0 to 2.3 percent, based on incoming seed-cotton trash contents of 5.1 and 4.9 percent, respectively.

Grade index ranged from 71.8 to 90.1, staple

length from 34.8 to 35.2, bale weight from 506.3 to 447.6 pounds, unit lint price from 15.56 to 21.32 cents (CCC) and from 19.57 to 26.32 cents (Market) per pound. Bale values were approximately $16.50 higher for the maximum-ginning treatment, based on CCC prices, and $19.00 higher, based on Market prices.

Decreases in Fibrograph span lengths were statistically significant, but the total range was only 0.018 inch for 2.5-percent span length and 0.021 inch for 50-percent span length, between minimum and maximum ginning treatments.

Additional cleaning influenced the lint foreign-matter and color measurements. Between minimum and maximum ginning treatments, lint foreign-matter varied from 11.2 to 3.3 percent, and reflectance varied from 65.8 to 72.7.

In 1968, as in 1967, increased gin processing had very little effect on fiber quality. Spinning performance of cotton processed by the maximum-ginning treatment was comparable to that with the minimum, except for a slight increase in card web neps. Normal improvement in spinning waste was apparent. As the amount of gin cleaning increased, there were slight increases in neps in yarn and in yarn irregularity.

INTRODUCTION

Considerable interest has been shown in the development of cottons with improved spinning performance in the Southeast within the past 6 or 7 years. Each State developed a comprehensive cotton-quality improvement program. These programs were successful in reducing the amount of cotton going into the Commodity Credit Corporation loan program and improving the acceptance of Southeastern cotton by the mills.

As a part of the overall program, improved varieties are being developed by both public and private breeders. By 1964, there were a sufficient number of upland-cotton strains with improved spinning performance in the rainbelt that a Regional High-Quality Cotton-Variety Testing Program was begun.

Based on the above sequence of events, it was decided that ginning tests should be conducted to determine if modifications are needed in ginning recommendations for the newly developed cottons, and to evaluate their spinning performance under controlled conditions. These tests were conducted in 1967 and 1968. The specific objective was to determine the effects of certain ginning treatments on grade factors, fiber properties, and spinning performance of new high-quality cottons (mainly high fiber strength and improved length-uniformity) in the Southeast.

Three of the more promising high-strength, high-quality cottons were included in the study. In 1967 they were Coker 413 from Pendleton, S.C.; Atlas 67 from Midville, Ga.; and TH–149 from Laurinburg, N.C. In 1968 they were Coker 413 from Vienna, Ga.; Atlas 68 from Midville, Ga.; and TH–149 from Laurinburg, N.C.

EXPERIMENTAL PROCEDURES

Cottons used—1967

It was intended that approximately 15,000 pounds of first-picking seed cotton would be spindle-harvested at each location and taken to the ARS Southeastern Cotton Ginning Research Laboratory for ginning tests. This would provide 15 ginning test lots of 1,000 pounds each, to produce bales weighing approximately 350 pounds for the ARS Pilot Spinning Plant.

However, very adverse weather conditions prevailed through the 1967 planting, growing, and harvesting seasons in many areas of the Southeast. Consequently, some of the test cotton was not harvested until December 6. A severe freeze early in November destroyed many green bolls at Pendleton and Laurinburg and resulted in seed cotton with high leaf content and generally poor quality. The Atlas 67 cotton at Midville was harvested under somewhat better conditions, but the crop was also late at this location. Therefore, only about 80 percent of the desired amounts of Atlas 67 and TH–149 was available for ginning tests, and the test-lot sizes had to be reduced.

The average grade index of cottons used in the study was 78.7, considerably lower than the average of 91.2 for the Southeast in 1967.[1]

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[1] U.S. Department of Agriculture. Cotton Quality Crop of 1967. U.S. Dept. Agr. Consumer and Marketing Service, Cotton Division, 41 (8), 73 pp. (Processed.) 1968.

Dates of harvesting and ginning were as follows:

Cotton variety	*Date harvested*	*Date ginned*
Coker 413	Nov. 17-18 Dec. 5-6	Nov. 21 Dec. 7
Atlas 67	Oct. 24	Oct. 27, 31
TH–149	Nov. 8-10	Nov. 14

Cottons used—1968

Approximately 15,000 pounds of first-picking seed cotton, spindle-harvested at each location, provided 15 ginning test lots of 1,000 pounds each, to produce bales weighing approximately 350 pounds.

A severe heat wave and drought in July and August of 1968 reduced yields and caused premature opening of bolls. However, test-lot sizes were adequate to produce normal-sized bales for spinning tests, in contrast to some small bales for spinning tests in 1967.

The average grade index of cottons used in 1968 was 81.8, considerably lower than the average of 91.9 for the Southeast.[2]

Dates of harvesting and ginning follow:

Cotton variety	*Date harvested*	*Date ginned*
Coker 413	Sept. 17	Sept. 19-20
Atlas 68	Oct. 14	Oct. 15
TH–149	Sept. 23	Sept. 25

Ginning and statistical procedures—1967

The ginning-equipment organization is described in table 1. Treatment 5 is the current recommendation for ginning machine-picked cotton to obtain grades acceptable to the mills and to yield good returns for the producer. Standard sampling was done at the wagon, feeder apron, seed drop, and lint slide. Ginning-performance evaluations were made by the Southeastern Cotton Ginning Research Laboratory, and quality evaluations were made by commercial laboratories, Consumer and Marketing Service testing laboratories, and the Pilot Spinning Plant fiber laboratories.

The statistical design of the study was a split-plot arrangement consisting of 3 locations (varieties) x 5 ginning treatments x 3 replications = 45 seed-cotton lots of approximately 1,000 pounds each. Locations were the main plots, and ginning treatments were the split plots. Duncan's multiple range test was used to determine which differences were significant among a set of treatment means. This procedure may be used, regardless of the significance of the F-ratio, in an analysis of variance.[3] It sometimes shows differences to be significant at a given protection level, even when the F-ratio in the analysis of variance does not.

Since (1) the setting of statistical probability levels is somewhat arbitrary, (2) the 90-percent probability factors have been published and defended as meaningful in assessing statistical significance, and (3) experience over several years has shown that the 90-percent probability level is a meaningful one for comparing various means relating to cotton research, we have used the 90-percent level in this report. In addition, we have also shown the more conventional 95-percent levels of significance among means.

Lot sizes were designed to provide approximately 350 pounds of lint. The five ginning treatments consisted of variations in seed-cotton and lint-cleaning equipment, including the sequence and amount. Ginning treatments were randomized within replications at each location.

Drier-inlet temperatures and ambient relative humidity during ginning for the individual test lots were recorded (table 22). Drier-inlet temperatures were selected to produce a fiber-moisture content of 6 to 8 percent at time of ginning. However, it was necessary to use artificial heat only on the Coker 413 test lots, as condition of the incoming seed cotton indicated that ambient air in the drying system would bring the Atlas and TH–149 fiber within the desired moisture range.

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[2] U.S. Department of Agriculture. Cotton Quality Crop of 1968. U.S. Dept. Agr. Consumer and Marketing Service, Cotton Division, 42 (7), 62 pp. (Processed.) 1969.

[3] Steel, R. G., and Torrie, J. H. Principles and Procedures of Statistics. 481 pp., illus. McGraw-Hill Book Co., Inc., New York and Toronto. 1960.

Ginning and statistical procedures—1968

The ginning-equipment organization, sampling plan, and statistical design of the 1968 study were the same as those of 1967.

Drier-inlet temperatures and ambient relative humidity during ginning for the individual test lots were recorded (table 26). Drier-inlet temperatures were selected to produce a fiber-moisture content of 6 to 8 percent at time of ginning. It was necessary to use artificial heat on the Coker 413 and Atlas 68 test lots and on part of the TH–149.

Spinning procedures

The processing was done by the Textile Research Laboratory of Texas Technological College in Lubbock, Tex., under a research contract with the Market Quality Research Division of the Agricultural Research Service.

All processing was done under controlled conditions. Each bale was processed individually, using the following manufacturing organization:

Manufacturing organization

Opening and picking	14-ounce lap.
Carding (with crush rolls)	50-grain sliver.
Carding rate	10 pounds per hour.
Two-process drawing:	
1st drawing	53-grain sliver.
2d drawing	55-grain sliver.
Roving	1.25 hank, 1.20 twist multiplier.
Spinning	40s yarn, 3.50 twist multiplier.

RESULTS

Ginning tests—1967

Bale weights, grades, Micronaire values, and staple lengths of individual test lots were determined (tables 23, 24, and 25). Grades, Micronaire values, and staple lengths in these tables were Smith-Doxey classification, obtained from cut samples sent to the Consumer and Marketing Service Classing Office, Columbia, S.C. The Coker 413 ranged from BG/LM Spotted, Bark to SLM, with staple lengths of 1⅟₃₂ to 1³⁄₃₂ inch and a Micronaire range of 3.2 to 3.9. The Atlas 67 ranged from SGO to SLM, staple length 1⅟₁₆ to 1³⁄₃₂ inch, with Micronaire of 3.8 to 4.3. The TH–149 ranged from BG to LM, staple length 1⅟₁₆ to 1³⁄₃₂ inch, and Micronaire 3.4 to 4.0.

The effects of different ginning treatments and locations (varieties) on various performance and quality factors were determined (tables 2, 3, and 4). Statistically significant differences are noted, as obtained from analysis of variance at the 5-percent and 1-percent levels, and from Duncan's multiple range tests at the 10-percent and 5-percent levels.

Moisture properties of the seed cotton, lint, and seed were determined by electronic moisture meter (Hart) and oven methods (table 2). A comparison of ginning treatments showed significant differences between them by both methods of lint-moisture determination, but the range was rather small. As the amount of gin-cleaning equipment increased, moisture content usually decreased slightly with the additional exposure.

Location or variety differences were more pronounced, as would be expected. Wagon seed-cotton moistures averaged 9.7 percent for Coker 413, 8.8 for Atlas, and 12.6 for TH–149. Corresponding lint moistures were 5.6 percent for Coker 413, 6.3 for Atlas, and 7.0 for TH–149. Seed moisture ranged from 9.3 percent for Atlas, to 10.2 for Coker 413, and 13.8 for TH–149.

Seed-cotton foreign-matter content in the wagon and feeder samples, respectively, was determined by the fractionation process (tables 3 and 4). Very few significant differences were found among wagon samples allotted to different ginning treatments, and these were at a low level of probability, which indicated good uniformity of test materials. Location differences reflected the adverse harvesting conditions, and averaged 2.7 percent total foreign matter for Atlas, 5.4 for Coker 413, and 9.1 for TH–149. Differences for the components of total foreign matter, (burs, sticks, and other material) followed the same general pattern.

Differences in gin-feeder foreign matter that could be attributed to ginning treatments were rather small. Treatment 4 produced the lowest small-leaf content by analysis of variance at the 5-percent level. Treatment 4 was also lowest when Duncan's multiple range test was applied for total trash and for several component trash contents. Stick, large-leaf, small-leaf, mote, and total trash contents were significantly affected by locations. The total trash averaged 1.5 percent for Atlas, 2.5 for Coker 413, and 5.4 for TH–149.

Effects of gin treatments and locations on classification, bale weights, and bale values were determined (table 5). Ginning treatments had significant effects on all of these properties. Treatment 5 gave the highest grade index, staple length, and bale value, even with reduced bale weight. Increases in the amount of lint cleaning caused greater differences than increases in seed-cotton cleaning.

The only item significantly affected by locations at the 5-percent level was staple length, which ranged from 33.73 for Coker 413 to 34.87 for Atlas.

Ginning treatments had no effect on ginning rate or Micronaire values (table 6). Turnout was reduced as amount of cleaning increased, as would be expected. Small but highly significant effects were found for 2.5-percent span lengths, even though the total range was only 0.016 inch from minimum cleaning to maximum cleaning.

Location differences were significant for all test items except turnout (table 6). The 2.5-percent span length of Coker 413 was significantly higher than that of Atlas 67 and TH–149, in contrast to staple-length measurements. Atlas 67 had significantly higher Micronaire values. Coker 413 had significantly higher ginning rate and turnout. TH–149 had significantly higher 50-percent span length and uniformity ratio.

Tests for lint foreign-matter content, color, residual linters, and seed germination were made (table 7). At the 5-percent level, ginning treatments had significant effects on all items except seed germination. Lint foreign-matter content ranged from 4.33 percent for treatment 5 to 12.28 for treatment 3. Color reflectance (R_d) ranged from 67.8 for treatment 1 to 73.3 for treatment 5. Colorimeter yellowness (+b) was 8.0 and 8.7 for the same treatments. Linters content varied from 11.2 percent for treatment 4 to 11.8 for treatment 3.

There were location differences for all items except Colorimeter reflectance. TH–149 had the highest lint foreign-matter content, and Atlas 67 had the lowest. Atlas 67 had the highest colorimeter reflectance and seed germination, and Coker 413 had the highest Colorimeter yellowness and residual linters.

Ginning tests—1968

Bale weights, grades, Micronaire, and staple lengths of individual test lots were determined (tables 27, 28, and 29). Grades, Micronaire, and staples in these tables are Smith-Doxey classifications obtained from cut samples sent to the Consumer and Marketing Service Classing Office, Columbia, S.C. The Coker 413 ranged from LM Light Spotted to SLM, with staple lengths of 1³⁄₃₂ to 1⅛ inch, and a Micronaire range of 3.7 to 4.1. The Atlas 68 ranged from GO to SLM, staple length 1¹⁄₁₆ to 1³⁄₃₂ inch, with a Micronaire of 4.2 to 5.0. The TH–149 ranged from BG to LM+, staple length 1¹⁄₁₆ to 1⅛ inch, and Micronaire 3.6 to 3.9.

The effects of different ginning treatments and locations on various performance and quality factors were determined (tables 8, 9, and 10). Statistically significant differences are noted, as obtained from analysis of variance at the 5-percent and 1-percent levels, and from Duncan's multiple range tests at the 10-percent and 5-percent levels.

Moisture properties of the seed cotton, lint, and seed were measured by electronic moisture meter (Hart) and oven methods (table 8). In comparing ginning treatments, significant differences were found for oven lint-moisture determination, but the range was very small. As the amount of gin-cleaning equipment increased, moisture contents usually decreased very slightly.

Location differences were insignificant, reflecting good control of the drying process. Wagon seed-cotton moistures averaged 11.7 percent for Coker 413, 11.8 for Atlas 68, and 8.7 for TH–149. Corresponding lint moistures were 6.7 percent for Coker 413, 6.2 for Atlas 68, and 6.4 for TH–149. Seed moisture ranged from 8.3 percent for TH–149, to 12.3 for Coker 413, and 12.9 for Atlas 68.

Seed-cotton foreign-matter content in the wagon and feeder samples, respectively, was determined by the fractionation process (tables 9 and 10). No significant differences were found among wagon samples allotted to ginning treatments. Location differences reflected poor defoliation and somewhat adverse harvesting conditions. They averaged 4.7 percent total foreign-matter content for Coker 413, 4.9 for Atlas 68, and 5.8 for TH–149.

Differences in gin-feeder foreign-matter content attributed to ginning treatments were rather small. Treatments 3, 4, and 5 produced the lowest small-leaf content, significant at the 1-percent level. Treatment 3 had the lowest scores when Duncan's multiple range test was applied for total trash and several component trash contents. Percentages of all components except sticks were significantly affected by locations. Total trash contents averaged 2.4 percent for Atlas, 2.3 for Coker 413, and 3.1 for TH–149.

Effects of gin treatments and locations on classification, bale weights, and bale values were determined (table 11). Ginning treatments had significant effects on all of these properties except staple length. Treatment 5 gave the highest grade index and bale value, even with reduced bale weight. Increases in the amount of lint cleaning generally caused greater differences than increases in seed-cotton cleaning.

All items differed significantly by locations at the 1-percent level, except bale weight per 1,500 pounds of seed cotton. Growing conditions, harvesting conditions, and the variety used at Vienna, Ga., contributed to higher grade and longer staple length.

Ginning treatments had no effect on Micronaire values (table 12). Ginning rate was highest for treatment 1 and lowest for treatment 5. Turnout was reduced as amount of cleaning increased, as would be expected. Small but highly significant effects were found for 2.5-percent span length, even though the total range was only 0.018 inch from minimum cleaning to maximum cleaning.

Location differences were noted for all test items (table 12). The 2.5-percent span length of Coker 413 and TH–149 was significantly higher than that of Atlas 68. Atlas 68 had significantly higher 50-percent span length, uniformity ratio, and Micronaire. Coker 413 and TH–149 had a significantly higher ginning rate than Atlas. TH–149 had significantly higher turnout than the other two varieties.

Tests for lint foreign-matter content, color, residual linters, and seed germination were made (table 13). At the 1-percent level, ginning treatments had significant effects on all items except seed linters and seed germination. Lint foreign-matter content ranged from 3.32 percent for treatment 5 to 11.20 for treatment 3, reflecting the seed-cotton and lint-cleaning treatments and somewhat adverse harvesting conditions. Colorimeter reflectance (R_d) ranged from 65.8 for treatment 1 to 72.7 for treatment 5. Colorimeter yellowness (+b) was 7.5 and 8.4 for the same treatments.

There were location differences for all items except visible- and invisible-lint foreign-matter contents. TH–149 had the highest total lint foreign-matter content, with Coker 413 lowest. Coker 413 had the highest Colorimeter reflectance and yellowness, and TH–149 had the highest residual linters and seed germination.

Fiber and spinning tests—1967

Results of fiber and spinning tests performed by the Textile Research Laboratories of Texas Technological College, Lubbock, Texas were analyzed (tables 14, 15, 16, and 17). Ginning treatments had no significant effect on Suter-Webb array measurements, Fibrograph uniformity ratio, or Pressley strength (table 14). Treatment 1 produced the highest 2.5-percent span length, and treatment 5 the lowest. Location differences were apparent for Suter-Webb array, 2.5-percent span length Pressley strength, and Micronaire readings, as would be expected.

Lint foreign-matter contents and Colorimeter responses were similar to those reported in table 7, using different laboratory results, but at somewhat different levels (table 15).

Ginning treatments had no significant effect on nep count or ends down in spinning (table 16). Two columns of figures for ends down are shown in table 16. The first column represents ends down for all test lots, regardless of the number of spindle-hours spun. The number of spindle-hours ranged from 4,800 to 6,720, depending on the amount of cotton available. All test lots were spun for at least 4,800 spindle-hours, and these figures are shown in the second column.

Ginning treatments did significantly affect opening and picking waste, card waste, break factor, and yarn appearance. The spinning-waste figures reflected lint foreign-matter differences as measured by the Shirley Analyzer. The break factor for treatment 5 was slightly lower than that for treatments 1 and 2. Treatment 1 produced the highest yarn appearance, and treatment 2 the lowest.

All break factors were relatively high. Those for Atlas and TH–149 were slightly higher than that for Coker 413.

Yarn-quality measurements by the Uster instrument showed that ginning treatments had no significant effect on strength, elongation, CV, neps per 1,000 yards, or low places per 1,000 yards (table 17). They significantly affected thick places per 1,000 yards, with treatment 1 being lowest and treatment 5 being highest. Yarn-irregularity CV was lowest for treatment 1 at 19.6, and highest for treatment 5 at 20.2. Small but significant location differences were apparent for strength, elongation, neps, thick places, and yarn-irregularity CV.

Fiber and spinning tests—1968

Results of the fiber and spinning tests performed at Lubbock were analyzed (tables 18, 19, 20, and 21). As the severity of the ginning treatments increased, there was no significant effect on Suter-Webb upper quartile length, and only slight but inconsistent effects on mean length, coefficient of variability, and fibers shorter than one-half inch. There was a slight decrease in Digital Fibrograph 2.5-percent span length (from 1.13 to 1.11) as severity of ginning treatments increased. Uniformity ratio, fiber strength, and Micronaire readings were not affected by ginning treatments. Location differences were apparent for Suter-Webb array, Fibrograph 2.5-percent span length and uniformity ratio, Pressley strength, and Micronaire readings, as would be expected. The Atlas 68 was of unusually high strength, but rather coarse.

Lint foreign-matter and Colorimeter responses to ginning treatments were similar to those reported in table 13, using different laboratory results, but at somewhat different levels (table 19). Lint foreign-matter contents ranged from 9.5 percent for treatment 1 downward to 2.5 percent for treatment 5. As gin processing increased, there was significant improvement in Colorimeter R_d, +b, and color grade index. However, when the same lint was processed through the Shirley Analyzer and the color measurements were repeated, there was no improvement. This reflects the influence of trash on color measurements of ginned lint. The color measurements of the Atlas 68 were slightly lower than those of the other two cottons, perhaps because of longer field exposure.

Ginning treatments had no significant effect on break factor, yarn appearance, or ends down in spinning (table 20). Two columns of figures for ends down are shown in table 20. The first column represents ends down for all test lots, regardless of the number of spindle-hours spun. The number of spindle-hours ranged from 5,760 to 6,720, depending on the amount of cotton available. All test lots were spun for at least 5,760 spindle-hours, and these figures are shown in the second column.

Ginning treatments did significantly affect opening and picking waste, card waste, and neps in card web. The spinning-waste figures reflected lint foreign-matter differences as measured by the Shirley Analyzer. Total picker and card waste ranged from 11.3 percent for treatment 1 to 5.2 for treatment 5. At the same time, neps in the card web increased very slightly from 3.3 to 5.4.

The analysis indicates a trend toward more ends down as severity of ginning treatments increased. However, erratic ends down in two or three bales could have affected the results. All break factors were relatively high, with that for Atlas 68 being highest at 2,409 units.

Yarn-quality measurement by the Uster instrument showed that ginning treatments had no significant effect on strength, elongation, or CV (table 21). They significantly affected neps, thick places, low places, and yarn-irregularity CV. These were adverse effects as gin processing increased. Neps increased from 342 to 403, thick places from 678 to 788, low places from 89 to 137, and yarn-irregularity CV from 20.3 to 20.9. Significant location differences were apparent for strength, neps, and all yarn-irregularity measurements.

CONCLUSIONS

These studies indicate that treatment 5 results in higher bale values for cotton. Present ginning recommendations for handling spindle-picked cotton appear to be adequate for the new varieties being developed. These recommendations take into account suitable grade factors and spinning performance. Since the present ginning recommendations represent a maximum amount of ginning machinery, bypassing certain cleaning machines should be practiced in some instances, especially for cottons with low incoming trash contents or to suit varying market demands for specified qualities.

APPENDIX

TABLE 1.—*Ginning-equipment organization for the Southeastern high-quality ginning-spinning study, 1967 and 1968*

Ginning-treatment				
No. 1	No. 2	No. 3	No. 4	No. 5
Tower drier. Stick machine. Extractor-cleaner-feeder. 79-saw gin. No lint cleaning.	Tower drier. Stick machine. Extractor-cleaner-feeder. 79-saw gin. One lint cleaner.	Tower drier. 7-cylinder cleaner. Stick machine. Tower drier. 7-cylinder cleaner. Extractor-cleaner-feeder. 79-saw gin. No lint cleaning.	Tower drier. 7-cylinder cleaner. Stick machine. Tower drier. 7-cylinder cleaner. Extractor-cleaner-feeder. 79-saw gin. One lint cleaner.	Tower drier. 7-cylinder cleaner. Stick machine. Tower drier. 7-cylinder cleaner. Extractor-cleaner-feeder. 79-saw gin. Two lint cleaners.

TABLE 2.—*Variation in moisture properties of the seed cotton, lint, and seed among ginning treatments and locations, 1967*

Variable	Wagon moisture of seed cotton	Feeder moisture of seed cotton	Wagon moisture of fiber (Hart)	Feeder moisture of fiber (Hart)	Lint moisture (Hart)	Lint moisture (Oven)	Seed moisture (Oven)
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Ginning treatment: [1]							
No. 1	10.0	10.3	7.5	6.5	6.2	6.8	11.2
No. 2	10.3	10.2	7.7	6.3	6.1	6.4	11.4
No. 3	10.3	9.8	7.4	6.2	6.1	6.4	10.7
No. 4	10.6	9.5	7.5	6.1	5.9	6.0	11.0
No. 5	10.6	9.8	7.6	6.2	5.9	5.9	11.2
Significance level [2]	n.s.	n.s.	n.s.	n.s.	.01	.01	n.s.
Duncan 0.10 [3]	1 <3,2 <4,5	4 <3,5 <2,1	n.s.	4,3,5 <1	4,5 <1	5 <4 <2,3 <1	3 <4,1,5 <2
Duncan 0.05 [3]	n.s.	n.s.	n.s.	4 <1	4,5 <1	5,4 <2,3 <1	n.s.
Location and variety: [4]							
No. 1	9.7	8.8	7.2	5.4	5.6	5.6	10.2
No. 2	8.8	8.9	7.2	6.6	6.2	6.3	9.3
No. 3	12.6	12.0	8.2	6.8	6.3	7.0	13.8
Significance level [2]	.05	.01	n.s.	.05	.05	n.s.	.01
Duncan 0.10 [3]	2,1 <3	1,2 <3	n.s.	1 <2,3	1 <2,3	1 <3	2,1 <3
Duncan 0.05 [3]	2,1 <3	1,2 <3	n.s.	1 <2,3	1 <2,3	1 <3	2,1 <3

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[1] See table 1.

[2] Based on analysis of variance, n.s. = Not significant, 0.05 = Significant at the 5-percent level of probability, and 0.01 = Significant at the 1-percent level of probability.

[3] The means are arrayed in ascending order by treatment number, based on significance at the probability level indicated by Duncan's multiple range tests. The symbol < means "less than."

[4] No. 1 = Pendleton, S.C. (Coker 413); No. 2 = Midville, Ga. (Atlas 67); No. 3 = Laurinburg, N.C. (TH-149).

TABLE 3.—*Variation in seed-cotton foreign-matter content among ginning treatments and locations, wagon samples, 1967*

Variable	Burs	Sticks	Grass	Large leaf	Small leaf	Motes	Total foreign matter
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Ginning treatment:[1]							
No. 1	1.0	0.4	0.6	1.4	0.8	1.1	5.4
No. 2	1.1	.4	.5	2.0	.8	1.1	6.0
No. 3	1.1	.5	.4	1.8	.8	1.2	5.8
No. 4	1.3	.4	.4	1.3	.8	1.0	5.2
No. 5	1.3	.5	.5	2.0	.8	1.2	6.3
Significance level [2]	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Duncan 0.10 [3]	n.s.	n.s.	n.s.	4 < 2, 5	n.s.	4 < 3	4 < 5
Duncan 0.05 [3]	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Location and variety: [4]							
No. 1	1.4	.5	1.2	1.1	1.1	1.0	5.4
No. 2	.6	.2	.0	.8	.3	.8	2.7
No. 3	1.5	.7	.3	3.2	.9	1.6	9.1
Significance level [2]	.05	.05	.05	n.s.	.01	.01	.01
Duncan 0.10 [3]	2 < 1, 3	2 < 1, 3	2, 3 < 1	2, 1 < 3	2 < 3, 1	2 < 1 < 3	2 < 1 < 3
Duncan 0.05 [3]	2 < 1, 3	2 < 3	2, 3 < 1	2 < 3	2 < 3, 1	2 < 1 < 3	2, 1 < 3

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[1] See table 1, page 9.

[2] Based on analysis of variance, n.s. = Not significant, 0.05 = Significant at the 5-percent level of probability, and 0.01 = Significant at the 1-percent level of probability.

[4] The means are arrayed in ascending order by treatment number, based on significance at the probability level indicated by Duncan's multiple range tests. The symbol < means "less than."

[4] No. 1 = Pendleton, S.C. (Coker 413); No. 2 = Midville, Ga. (Atlas 67); No. 3 = Laurinburg, N.C. (TH-149).

TABLE 4.—*Effect of ginning treatments and locations (varieties) on seed-cotton foreign-matter content in feeder samples, 1967*

Variable	Burs	Sticks	Grass	Large leaf	Small leaf	Motes	Total foreign matter
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Ginning treatment: [1]							
No. 1	0.4	0.4	(2)	0.6	0.5	1.1	3.6
No. 2	.5	.4	(2)	.7	.5	1.1	3.8
No. 3	.5	.3	(2)	.4	.4	1.0	2.9
No. 4	.4	.2	(2)	.3	.3	.8	2.5
No. 5	.4	.3	(2)	.4	.4	.9	3.0
Significance level [3]	n. s.	n. s.	--------	n. s.	.05	n. s.	n. s.
Duncan 0.10 [4]	n. s.	4<2,1	--------	4<2	4,3<1,2 4<5	4<3,1,2	4<1,2
Duncan 0.05 [4]	n. s.	4<1	--------	n. s.	4<1,2	4<1,2	4<2
Location and variety: [5]							
No. 1	.8	.3	(2)	.2	.4	.8	2.5
No. 2	.2	.2	(2)	.3	.3	.7	1.5
No. 3	.5	.5	(2)	1.1	.6	1.5	5.4
Significance level [3]	n. s.	.05	--------	.05	.01	.05	.01
Duncan 0.10 [4]	2<1	2,1<3	--------	1,2<3	2<1<3	2,1<3	2,1<3
Duncan 0.05 [4]	2<1	2<3	--------	1,2<3	2<1<3	2,1<3	2,1<3

[1] See table 1, page 9.

[2] Not available.

[3] Based on analysis of variance, n. s. = Not significant, 0.05 = Significant at the 5-percent level of probability, and 0.01 = Significant at the 1-percent level of probability.

[4] The means are arrayed in ascending order by treatment number, based on significance at the probability level indicated by Duncan's multiple range tests. The symbol < means "less than."

[5] No. 1 = Pendleton, S. C. (Coker 413): No. 2 = Midville, Ga. (Atlas 67): No. 3 = Laurinburg, N. C. (TH-149).

TABLE 5.—*Effect of ginning treatments and locations (varieties) on classification, bale weights, and bale values, 1967*

Variable	Classification		Bale weight per 1,500 lb. seed cotton	Lint price per lb.—CCC	Lint price per lb.—Market[5]	Bale value per 1,500 lb. seed cotton—CCC	Bale value per 1,500 lb. seed cotton—Market
	Composite grade	Staple length					
	Index	*32d in.*	*Pounds*	*Cents*	*Cents*	*Dollars*	*Dollars*
Ginning treatment: [1]							
No. 1	70.3	34.1	503	15.06	18.74	76.00	94.62
No. 2	79.0	34.4	465	17.01	20.82	79.40	97.15
No. 3	71.9	34.1	500	15.29	18.99	76.38	94.80
No. 4	83.0	34.3	480	16.76	19.24	84.63	102.96
No. 5	89.4	34.7	462	19.75	23.77	91.78	110.42
Significance level [2]	.01	.05	.01	.01	.01	.01	.01
Duncan 0.10 [3]	1,3 <2,4 <5	1,3 <5	5,2 <4 <3,1	1,3 <4,2 <5	1,3,4 <2 <5	1,3 <2 <4 <5	1,3,2 <4 <5
Duncan 0.05 [3]	1,3 <2,4 <5	1,3 <5	5 <4 <3,1	1,3 <4,2 <5	1,3 <2 <5	1,3 <5	1,3,2 <5
Location and variety: [4]							
No. 1	78.4	33.7	504	15.99	20.03	83.56	101.37
No. 2	84.6	34.9	479	18.74	22.81	89.61	109.09
No. 3	73.2	34.4	463	15.59	19.44	71.75	89.51
Significance level [2]	n.s.	.01	n.s.	n.s.	n.s.	n.s.	n.s.
Duncan 0.10 [3]	3 <2	1 <3 <2	3 <1	3,1 <2	3,1 <2	n.s.	n.s.
Duncan 0.05 [3]	3 <2	1 <3,2	n.s.	n.s.	n.s.	n.s.	n.s.

[1] See table 1, page 9.

[2] Based on analysis of variance, n.s. = Not significant; 0.05 = Significant at the 5-percent level of probability, and 0.01 = Significant at the 1-percent level of probability.

[3] The means are arrayed in ascending order by treatment number, based on significance at the probability level indicated by Duncan's multiple range tests. The symbol < means "less than."

[4] No. 1 = Pendleton, S.C. (Coker 413); No. 2 = Midville, Ga. (Atlas 67); No. 3 = Laurinburg, N.C. (TH–149).

[5] Market price for Greenville, S.C., October 1967.

TABLE 6.—*Effect of ginning treatments and locations (varieties) on ginning performance and fiber properties, 1967*

Variable	Ginning rate per hour	Ginning rate per saw per hour	Turnout	Digital Fibrograph			Micronaire
				2.5% span length	50% span length	Uniformity ratio	
	Bales	*Pounds*	*Percent*	*Inches*	*Inches*	*Percent*	*Reading*
Ginning treatment: [1]							
No. 1	3.2	19.6	33.5	1.14	0.56	48.7	3.9
No. 2	3.2	19.6	31.0	1.14	.54	48.2	3.8
No. 3	3.3	19.8	33.3	1.13	.54	48.0	3.8
No. 4	3.3	20.2	32.0	1.12	.55	48.4	3.8
No. 5	3.2	19.4	30.8	1.12	.54	47.6	3.8
Significance level [2]	n.s.	n.s.	.01	.01	.05	n.s.	n.s.
Duncan 0.10 [3]	n.s.	n.s.	5,2 <4 <3,1	5 <4 <3 <2 <1	5 <4 <1;2,3 <1	5 <4,1	n.s.
Duncan 0.05 [3]	n.s.	n.s.	5 <4 <3,1	5 <3,2,1	5,2 <1	5 <1	n.s.
Location and variety: [4]							
No. 1	3.8	22.7	33.6	1.16	.52	45.2	3.5
No. 2	2.9	17.6	31.9	1.12	.55	49.6	4.1
No. 3	3.1	18.9	30.9	1.12	.56	49.7	3.8
Significance level [2]	.05	.05	n.s.	.05	.05	.01	.01
Duncan 0.10 [3]	2,3 <1	2,3 <1	3 <1	2,3 <1	1 <2,3	1 <2,3	1 <3 <2
Duncan 0.05 [3]	2,3 <1	2,3 <1	n.s.	2,3 <1	1 <2,3	1 <2,3	1 <3 <2

[1] See table 1, page 9.

[2] Based on analysis of variance, n.s. = Not significant, 0.05 = Significant at the 5-percent level of probability, and 0.01 = Significant at the 1-percent level of probability.

[3] The means are arrayed in ascending order by treatment number, based on significance at the probability level indicated by Duncan's multiple range tests. The symbol < means "less than."

[4] No. 1 = Pendleton, S.C. (Coker 413); No. 2 = Midville, Ga. (Atlas 67); No. 3 = Laurinburg, N.C. (TH–149).

TABLE 7.—*Effect of ginning treatments and locations (varieties) on lint foreign-matter content, lint color, seed linters, and seed germination, 1967*

Variable	Lint foreign-matter content			Color	Color	Seed linters	Seed germination
	Visible	Invisible	Total				
	Percent	*Percent*	*Percent*	R_d	+b	*Percent*	*Percent*
Ginning treatment: [1]							
No. 1	10.66	1.46	12.13	67.8	8.0	11.3	65.7
No. 2	5.90	1.25	7.14	71.2	8.5	11.6	64.1
No. 3	10.88	1.39	12.28	68.4	8.2	11.8	66.0
No. 4	4.41	1.01	5.42	72.7	8.5	11.2	66.0
No. 5	3.27	1.06	4.33	73.3	8.7	11.3	64.5
Significance level [2]	.01	.01	.01	.01	.05	.05	n.s.
Duncan 0.10 [3]	5 <4 <2 <1,3	4 <5 <2 <3 <1	5 <4 <2 <1,3	1 <3 <2 <4 <5	1 <3 <2,4 <5	4,5,1 <3;4 <2	2 <3,4
Duncan 0.05 [3]	5 <2 <1,3	4,5 <2 <3,1	5 <2 <1,3	1,3 <2 <5	1 <5	4,5,1 <3	n.s.
Location and variety: [4]							
No. 1	6.75	1.27	8.03	69.1	9.9	11.0	57.9
No. 2	4.20	1.00	5.21	73.3	8.1	10.4	82.8
No. 3	10.12	1.43	11.54	69.6	7.1	11.9	55.1
Significance level [2]	.01	.01	.01	n.s.	.01	.05	.01
Duncan 0.10 [3]	2 <1 <3	2 <1 <3	2 <1 <3	1,3 <2	3 <2 <1	2 <3,1	3,1 <2
Duncan 0.05 [3]	2 <1 <3	2 <1 <3	2 <1 <3	1 <2	3 <2 <1	2 <3,1	3,1 <2

[1] See table 1, page 9.

[2] Based on analysis of variance, n.s. = Not significant, 0.05 = Significant at the 5-percent level of probability, and 0.01 = Significant at the 1-percent level of probability.

[3] The means are arrayed in ascending order by treatment number, based on significance at the probability level indicated by Duncan's multiple range tests. The symbol < means "less than."

[4] No. 1 = Pendleton, S.C. (Coker 413); No. 2 = Midville, Ga. (Atlas 67); No. 3 = Laurinburg, N.C. (TH-149).

TABLE 8.—*Variation in moisture properties of the seed cotton, lint, and seed among ginning treatments and locations, 1968*

Variable	Wagon moisture of seed cotton	Feeder moisture of seed cotton	Wagon moisture of fiber (Hart)	Feeder moisture of fiber (Hart)	Lint moisture (Hart)	Lint moisture (Oven)	Seed moisture (Oven)
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Ginning treatment: [1]							
No. 1	10.6	9.9	8.5	6.2	6.4	6.7	11.1
No. 2	11.0	9.6	8.5	6.1	6.4	6.4	11.2
No. 3	10.4	9.5	8.4	6.2	6.3	6.5	10.7
No. 4	10.6	9.9	8.5	6.1	6.4	6.3	11.4
No. 5	11.0	9.9	8.7	6.3	6.6	6.4	11.3
Significance level [2]	.05	n.s.	n.s.	n.s.	n.s.	.05	n.s.
Duncan 0.10 [3]	3,1,4 <2,5	n.s.	3 <5	n.s.	n.s.	4,2,5 <1	3 <5,4
Duncan 0.05 [3]	3 <2,5;1 <5	n.s.	3 <5	n.s.	n.s.	4,2,5 <1	n.s.
Location and variety: [4]							
No. 1	11.7	10.6	9.3	6.3	7.0	6.7	12.3
No. 2	11.8	10.6	9.2	6.1	6.0	6.2	12.9
No. 3	8.7	8.1	7.1	6.2	6.3	6.4	8.3
Significance level [2]	.01	.01	.01	n.s.	n.s.	n.s.	.01
Duncan 0.10 [3]	3 <1,2	3 <1,2	3 <2,1	n.s.	n.s.	n.s.	3 <1,2
Duncan 0.05 [3]	3 <1,2	3 <1,2	3 <2,1	n.s.	n.s.	n.s.	3 <1,2

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[1] See table 1, page 9.

[2] Based on analysis of variance, n.s. = Not significant, 0.05 = Significant at the 5-percent level of probability, and 0.01 = Significant at the 1-percent level of probability.

[3] The means are arrayed in ascending order by treatment number, based on significance at the probability level indicated by Duncan's multiple range tests. The symbol < means "less than."

[4] No. 1 = Vienna, Ga. (Coker 413); No. 2 = Midville, Ga. (Atlas 68); No. 3 = Laurinburg, N.C. (TH–149).

TABLE 9.—*Variation in seed-cotton foreign-matter content among ginning treatments and locations, wagon samples, 1968*

Variable	Burs	Sticks	Grass	Large leaf	Small leaf	Motes	Total foreign matter
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Ginning treatment: [1]							
No. 1	1.1	0.6	0.1	1.1	1.1	1.2	5.1
No. 2	1.0	.6	.1	1.2	1.1	1.1	5.1
No. 3	1.0	.5	.2	1.1	1.0	1.0	4.9
No. 4	.9	.5	.2	1.2	1.2	1.1	5.1
No. 5	1.0	.5	.3	1.3	1.2	1.1	5.5
Significance level [2]	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.
Duncan 0.10 [3]	n. s.	n. s.	1,2<5	n. s.	3,2,1<5	3<4,5,1	3<5
Duncan 0.05 [3]	n. s.	n. s.	n. s.	n. s.	3<5	3<5,1	n. s.
Location and variety: [4]							
No. 1	1.4	.4	.1	.7	1.2	.8	4.7
No. 2	1.0	.5	.0	1.2	1.0	1.2	4.9
No. 3	.7	.7	.4	1.6	1.2	1.3	5.8
Significance level [2]	.05	.05	n. s.	.05	n. s.	.01	.05
Duncan 0.10 [3]	3<2<1	1,2<3	2,1<3	1<2,3	2<3,1	1<2<3	1,2<3
Duncan 0.05 [3]	3<2<1	1<3	2<3	1<2,3	n. s.	1<2,3	1,2<3

[1] See table 1, page 9.

[2] Based on analysis of variance, n. s. = Not significant, 0.05 = Significant at the 5-percent level of probability, and 0.01 = Significant at the 1-percent level of probability.

[3] The means are arrayed in ascending order by treatment number, based on significance at the probability level indicated by Duncan's multiple range tests. The symbol < means "less than."

[4] No. 1 = Vienna, Ga. (Coker 413); No. 2 = Midville, Ga. (Atlas 68); No. 3 = Laurinburg, N. C. (TH-149).

TABLE 10.—*Effect of ginning treatments and locations (varieties) on seed-cotton foreign-matter content in feeder samples, 1968*

Variable	Burs	Sticks	Grass	Large leaf	Small leaf	Motes	Total foreign matter
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Ginning treatment:[1]							
No. 1	0.3	0.4	0.1	0.5	0.7	0.9	2.9
No. 2	.4	.4	.1	.4	.7	1.0	3.0
No. 3	.3	.4	.1	.3	.5	.7	2.3
No. 4	.4	.4	.1	.3	.5	.8	2.4
No. 5	.3	.4	.1	.4	.5	.8	2.5
Significance level [2]	n.s.	n.s.	n.s.	n.s.	.01	.01	.01
Duncan 0.10 [3]	n.s.	n.s.	n.s.	3, 4 < 1	3, 4, 5 < 2, 1	3, 4, 5 < 1, 2	3, 4, 5 < 1, 2
Duncan 0.05 [3]	n.s.	n.s.	n.s.	3, 4 < 1	3, 4, 5 < 2, 1	3, 4, 5 < 1, 2	3, 4, 5 < 1, 2
Location and variety: [4]							
No. 1	.5	.3	.1	.2	.6	.6	2.3
No. 2	.3	.4	.0	.4	.4	.9	2.4
No. 3	.2	.5	.2	.5	.7	1.0	3.1
Significance level [2]	.05	n.s.	.05	.05	.01	.01	.05
Duncan 0.10 [3]	3 < 2 < 1	1, 2 < 3	2 < 1 < 3	1 < 2, 3	2 < 1 < 3	1 < 2 < 3	1, 2 < 3
Duncan 0.05 [3]	3 < 2 < 1	1 < 3	2 < 1, 3	1 < 2, 3	2 < 1 < 3	1 < 2, 3	1, 2 < 3

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[1] See table 1, page 9.

[2] Based on analysis of variance, n.s. = Not significant, 0.05 = Significant at the 5-percent level of probability, and 0.01 = Significant at the 1-percent level of probability.

[3] The means are arrayed in ascending order by treatment number, based on significance at the probability level indicated by Duncan's multiple range tests. The symbol < means "less than."

[4] No. 1 = Vienna, Ga. (Coker 413); No. 2 = Midville, Ga. (Atlas 68); No. 3 = Laurinburg, N.C. (TH–149).

TABLE 11.—*Effect of ginning treatments and locations (varieties) on classification, bale weights, and bale values, 1968*

Variable	Classification		Bale weight per 1,500 lb. seed cotton	Lint price per lb.—CCC	Lint price per lb.—Market [5]	Bale value per 1,500 lb. seed cotton—CCC	Bale value per 1,500 lb. seed cotton—Market
	Composite grade	Staple length					
	Index	*32d in.*	*Pounds*	*Cents*	*Cents*	*Dollars*	*Dollars*
Ginning treatment: [1]							
No. 1	71.8	34.8	506	15.56	19.57	78.72	99.04
No. 2	84.7	35.0	460	19.24	23.57	89.66	109.82
No. 3	74.2	34.8	496	15.96	19.91	79.10	98.68
No. 4	88.1	35.2	458	20.70	25.70	94.71	117.55
No. 5	90.1	35.1	448	21.32	26.32	95.41	117.82
Significance level [2]	.01	n.s.	.01	.01	.01	.01	.01
Duncan,0.10 [3]	1,3 <2 <4,5	3,1 <4	5 <4,2 <3 <1	1,3 <2 <4,5	1,3 <2 <4,5	1,3 <2 <4,5	3,1 <2 <4,5
Duncan 0.05 [3]	1,3 <2,4 2 <5	n.s.	5 <4,2 <3 <1	1,3 <2 <4,5	1,3 <2 <4,5	1,3 <2 <4,5	3,1 <2 <4,5
Location and variety: [4]							
No. 1	88.4	35.5	473	20.54	25.27	96.62	118.99
No. 2	79.1	34.6	472	17.63	22.06	82.58	103.34
No. 3	77.8	34.9	476	17.50	21.72	83.36	103.41
Significance level [2]	.01	.01	n.s.	.01	.01	.01	.01
Duncan 0.10 [3]	3,2 <1	2 <3 <1	n.s.	3,2 <1	3,2 <1	2,3 <1	2,3 <1
Duncan 0.05 [3]	3,2 <1	2,3 <1	n.s.	3,2 <1	3,2 <1	2,3 <1	2,3 <1

[1] See table 1, page 9.

[2] Based on analysis of variance, n.s. = Not significant, 0.05 = Significant at the 5-percent level of probability, and 0.01 = Significant at the 1-percent level of probability.

[3] The means are arrayed in ascending order by treatment number, based on significance at the probability level indicated by Duncan's multiple range tests. The symbol < means "less than."

[4] No. 1 = Vienna, Ga. (Coker 413); No. 2 = Midville, Ga. (Atlas 68); No. 3 = Laurinburg, N.C. (TH–149).

[5] Market price for Greenville, S.C., October 1968.

TABLE 12.—*Effect of ginning treatments and locations (varieties) on ginning performance and fiber properties, 1968*

Variable	Ginning rate per hour	Ginning rate per saw per hour	Turnout	Digital Fibrograph			Micronaire
				2.5% span length	50% span length	Uniformity ratio	
	Bales	*Pounds*	*Percent*	*Inches*	*Inches*	*Percent*	*Reading*
Ginning treatment: [1]							
No. 1	3.8	22.9	33.8	1.11	0.51	45.6	4.2
No. 2	3.5	21.2	31.1	1.10	.49	44.8	4.1
No. 3	3.7	22.3	33.1	1.12	.51	45.3	4.1
No. 4	3.4	20.7	30.5	1.10	.49	44.7	4.1
No. 5	3.4	20.6	29.8	1.10	.49	44.4	4.1
Significance level [2]	.01	.01	.01	.01	.01	.01	n.s.
Duncan 0.10 [3]	5,4,2 <3,1	5,4,2 <3,1	5 <4 <2 <3 <1	4,5,2 <1 <3	5,4,2 <1,3	5,4,2 <3,1	n.s.
Duncan 0.05 [3]	5,4,2 <3,1	5,4,2 <3,1	5 <4 <2 <3 <1	4,5,2 <1 <3	5,4,2 <1,3	5,4 <3,1;2 <1	n.s.
Location and variety: [4]							
No. 1	3.7	22.3	31.5	1.12	.50	44.2	4.0
No. 2	3.4	20.6	31.5	1.08	.51	46.8	4.7
No. 3	3.6	21.7	31.9	1.12	.49	43.9	3.7
	01	.01	.05	.01	.01	.01	.01
		2 <3,1	n.s.	2 <3,1	3 <2	3,1 <2	3 <1 <2
		2 <3,1	n.s.	2 <3,1	3 <2	3,1 <2	3 <1 <2

.05 = Significant at the 5-percent level of probability, and 0.01 = Significant at the 1-percent level

umber, based on significance at the probability level indicated by Duncan's multiple range tests.

Atlas 68); No. 3 = Laurinburg, N.C. (TH-149).

TABLE 13.—*Effect of ginning treatments and locations (varieties) on lint foreign-matter content, lint color, seed linters, and seed germination, 1968*

Variable	Lint foreign-matter content			Color	Color	Seed linters	Seed germination
	Visible	Invisible	Total				
	Percent	*Percent*	*Percent*	R_d	+b	*Percent*	*Percent*
Ginning treatment: [1]							
No. 1	9.47	1.74	11.20	65.8	7.5	12.9	81.7
No. 2	4.03	1.23	5.28	70.8	8.0	12.8	81.7
No. 3	8.09	1.54	9.63	67.6	7.6	12.9	81.1
No. 4	3.47	1.20	4.67	71.1	8.2	13.0	82.9
No. 5	2.19	1.13	3.32	72.7	8.4	12.9	83.2
Significance level [2]	.01	.01	.01	.01	.01	n.s.	n.s.
Duncan 0.10 [3]	5 <4 <2 <3 <1	5,4,2 <3 <1	5 <4 <2 <3 <1	1 <3 <2,4 <5	1 <3 <2 <4 <5	n.s.	n.s.
Duncan 0.05 [3]	5 <4 <2 <3 <1	5,4,2 <3 <1	5 <4 <2 <3 <1	1 <3 <2,4 <5	1,3 <2,4 <5	n.s.	n.s.
Location and variety: [4]							
No. 1	4.91	1.21	6.11	71.7	8.6	13.1	81.0
No. 2	5.24	1.33	6.57	66.2	8.0	11.0	77.3
No. 3	6.20	1.57	7.78	71.0	7.2	14.6	88.0
Significance level [2]	n.s.	n.s.	.05	.01	.01	.01	.01
Duncan 0.10 [3]	1,2 <3	1 <3	1,2 <3	2 <3 <1	3 <2 <1	2 <1 <3	2 <1 <3
Duncan 0.05 [3]	1 <3	1 <3	1,2 <3	2 <3 <1	3 <2 <1	2 <1 <3	2 <1 <3

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[1] See table 1, page 9.

[2] Based on analysis of variance, n.s. = Not significant, 0.05 = Significant at the 5-percent level of probability, and 0.01 = Significant at the 1-percent level of probability.

[3] The means are arrayed in ascending order by treatment number, based on significance at the probability level indicated by Duncan's multiple range tests. The symbol < means "less than."

[4] No. 1 = Vienna, Ga. (Coker 413); No. 2 = Midville, Ga. (Atlas 68); No. 3 = Laurinburg, N.C. (TH-149).

TABLE 14.—*Effect of ginning treatments and locations (varieties) on length, length distribution, strength, and fineness of the ginned lint, 1967*

Variable	Suter-Webb array				Digital Fibrograph		Pressley strength		Micronaire
	Upper quartile length	Mean length	Coefficient of variability	Fibers shorter than ½ inch	2.5% span length	Uniformity ratio	0-in. gage	⅛-in. gage	
	Inches	*Inches*	*Percent*	*Percent*	*Inches*	*Percent*	*1,000 Psi*	*Grams/tex*	*Reading*
Ginning treatment: [1]									
No. 1	1.24	1.06	25.0	5.7	1.15	47.3	86.7	25.4	4.0
No. 2	1.25	1.06	25.4	5.9	1.14	47.3	86.9	25.3	3.8
No. 3	1.24	1.05	25.6	5.7	1.15	46.8	87.0	25.5	3.8
No. 4	1.23	1.05	25.2	5.9	1.14	47.4	86.7	25.3	3.9
No. 5	1.23	1.04	25.9	6.3	1.12	47.0	86.7	25.3	3.8
Significance level [2]	n.s.	n.s.	n.s.	n.s.	.01	n.s.	n.s.	n.s.	.05
Duncan 0.10 [3]	n.s.	5 <2	1 <5	3,1 <5	5 <4 <3,1	n.s.	n.s.	n.s.	n.s.
Duncan 0.05 [3]	n.s.	n.s.	n.s.	n.s.	5 <2,3,1	n.s.	n.s.	n.s.	n.s.
Location and variety: [4]									
No. 1	1.28	1.05	29.5	7.9	1.17	46.2	86.7	24.2	3.5
No. 2	1.21	1.05	23.0	4.4	1.12	48.0	88.5	26.1	4.1
No. 3	1.23	1.06	23.8	5.3	1.12	47.3	87.2	25.8	4.0
Significance level [2]	.01	n.s.	.01	.01	.05	n.s.	.05	.01	.01
Duncan 0.10 [3]	2,3 <1	n.s.	2,3 <1	2,3 <1	n.s.	n.s.	1 <2	1 <3,2	1 <3,2
Duncan 0.05 [3]	2 <1	n.s.	2,3 <1	2,3 <1	n.s.	n.s.	n.s.	1 <2	1 <3,2

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[1] See table 1, page 9.

[2] Based on analysis of variance, n.s. = Not significant, 0.05 = Significant at the 5-percent level of probability, and 0.01 = Significant at the 1-percent level of probability.

[3] The means are arrayed in ascending order by treatment number, based on significance at the probability level indicated by Duncan's multiple range tests. The symbol < means "less than."

[4] No. 1 = Pendleton, S.C. (Coker 413); No. 2 = Midville, Ga. (Atlas 67); No. 3 = Laurinburg, N.C. (TH–149)

TABLE 15.—*Effect of ginning treatments and locations (varieties) on lint foreign-matter content, Colorimeter R_d, $+b$, and color grade index, 1967*

Variable	Lint foreign matter content—Shirley Analyzer	Colorimeter					
		Color of—				Color grade of—	
		Ginned lint	Cleaned lint	Ginned lint	Cleaned lint	Ginned lint	Cleaned lint
	Percent	R_d	R_d	$+b$	$+b$	*Index*	*Index*
Ginning treatment: [1]							
No. 1	10.3	67.4	73.7	8.4	9.2	86.2	95.6
No. 2	6.0	69.7	74.1	8.6	9.1	88.0	95.9
No. 3	11.0	67.2	73.2	8.5	9.3	85.6	96.8
No. 4	5.0	71.3	74.6	8.7	9.2	91.8	97.3
No. 5	4.0	71.6	74.2	8.9	9.2	91.8	96.3
Significance level [2]	.01	.01	n.s.	.01	n.s.	.01	n.s.
Duncan 0.10 [3]	5<2<1,3 4<1,3	3,1<2<4,5	3<4	1<4,5 3,2<5	2<3	3,1,2<5,4	n.s.
Duncan 0.05 [3]	5<2<1,3 4<1,3	3,1<2<4,5	3<4	1<4,5 3,2<5	n.s.	3,1,2<5,4	n.s.
Location and variety: [4]							
No. 1	7.1	68.0	70.5	10.2	10.4	85.8	90.7
No. 2	4.6	72.1	75.8	8.3	8.8	94.2	100.0
No. 3	10.2	68.2	75.5	7.4	8.3	86.0	98.4
Significance level [2]	.01	n.s.	.05	.01	.01	n.s.	n.s.
Duncan 0.10 [3]	2<3	n.s.	n.s.	3,2<1	3,2<1	n.s.	n.s.
Duncan 0.05 [3]	2<3	n.s.	n.s.	3,2<1	3,2<1	n.s.	n.s.

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[1] See table 1, page 9.

[2] Based on analysis of variance, n.s. = Not significant, 0.05 = Significant at the 5-percent level of probability, and 0.01 = Significant at the 1-percent level of probability.

[3] The means are arrayed in ascending order by treatment number, based on significance at the probability level indicated by Duncan's multiple range tests. The symbol < means "less than."

[4] No. 1 = Pendleton, S.C. (Coker 413); No. 2 = Midville, Ga. (Atlas 67); No. 3 = Laurinburg, N.C. (TH-149).

TABLE 16.—*Effect of ginning treatments and locations (varieties) on processing performance, 1967*

Variable	Opening and picking waste	Card waste	Total picker and card waste	Neps per 100 sq. in. card web	Break factor	Yarn appearance	Corrected ends down (EDMSH)	Corrected ends down—4,800 sp. hrs. (EDMSH)
	Percent	*Percent*	*Percent*	*Number*	*Units*	*Index*	*Number*	*Number*
Ginning treatment: [1]								
No. 1	3.4	8.7	11.8	5.0	2,335	77.0	31	32
No. 2	1.3	6.4	7.6	5.9	2,345	71.9	34	36
No. 3	3.2	9.0	12.0	6.0	2,315	74.4	32	34
No. 4	1.0	5.6	6.5	5.7	2,313	76.0	29	31
No. 5	.9	5.2	6.1	6.8	2,280	72.0	29	32
Significance level [2]	.01	.01	.01	n.s.	.05	.05	n.s.	n.s.
Duncan 0.10 [3]	5,4,2 <3,1	5,4 <2 <1,3	5,4 <2 <1,3	1 <5	5 <1,2	2,5 <4,1	n.s.	n.s.
Duncan 0.05 [3]	5,4,2 <3,1	5 <2 <1,3 4 <1,3	5 <2 <1,3 4 <1,3	1 <5	5 <1,2	2,5 <1	n.s.	n.s.
Location and variety: [4]								
No. 1	2.0	7.2	9.0	6.1	2,152	73.7	32	35
No. 2	1.2	5.0	6.1	5.5	2,405	76.1	29	31
No. 3	2.8	8.8	11.3	6.0	2,395	72.9	33	33
Significance level [2]	.05	.01	.01	n.s.	.01	.05	.05	n.s.
		2 <1,3	2 <3	n.s.	1 <3,2	3 <2	n.s.	n.s.
		2 <3	2 <3	n.s.	1 <3,2	n.s.	n.s.	n.s.

, 0.05 = Significant at the 5-percent level of probability, and 0.01 = Significant at the 1-percent level

ent number, based on significance at the probability level indicated by Duncan's multiple range tests.

le, Ga. (Atlas 67); No. 3 = Laurinburg, N.C. (TH–149).

TABLE 17.—*Effect of ginning treatments and locations (varieties) on processing performance, single-strand evaluations, and imperfections (Uster), 1967*

Variable	Strength	Elongation	Strength coefficient of variability	Neps per 1,000 yards	Thick places per 1,000 yards	Low places per 1,000 yards	Yarn-irregularity coefficient of variability
	Grams	*Percent*	*Percent*	*Number*	*Number*	*Number*	*Percent*
Ginning treatment: [1]							
No. 1	328	6.5	7.1	881	1,080	551	19.6
No. 2	329	6.6	7.1	965	1,174	615	19.9
No. 3	326	6.5	7.2	1,007	1,193	642	20.0
No. 4	327	6.5	7.7	866	1,111	596	19.8
No. 5	326	6.5	7.2	1,005	1,230	687	20.2
Significance level [2]	n.s.	n.s.	n.s.	n.s.	.05	n.s.	.01
Duncan 0.10 [3]	n.s.	n.s.	n.s.	4,1 <5,3	1 <2 <3,5;4 <3,5	1 <3,5;4 <5	1 <2 <5;4 <5
Duncan 0.05 [3]	n.s.	n.s.	n.s.	4 <5,3	1 <5	1 <3,5;4 <5	1 <3,5;4,2 <5
Location and variety: [4]							
No. 1	319	6.9	7.6	1,077	1,301	697	20.4
No. 2	331	6.4	7.2	743	1,065	618	19.8
No. 3	331	6.2	7.0	1,014	1,107	540	19.5
Significance level [2]	.05	.01	n.s.	.05	.05	n.s.	.05
Duncan 0.10 [3]	1 <3,2	3,2 <1	n.s.	n.s.	n.s.	n.s.	3 <1
Duncan 0.05 [3]	n.s.	3,2 <1	n.s.	n.s.	n.s.	n.s.	n.s.

[1] See table 1, page 9.

[2] Based on analysis of variance, n.s. = Not significant, 0.05 = Significant at the 5-percent level of probability, and 0.01 = Significant at the 1-percent level of probability.

[3] The means are arrayed in ascending order by treatment number, based on significance at the probability level indicated by Duncan's multiple range tests. The symbol < means "less than."

[4] No. 1 = Pendleton, S.C. (Coker 413); No. 2 = Midville, Ga. (Atlas 67); No. 3 = Laurinburg, N.C. (TH-149).

TABLE 18.—*Effect of ginning treatments and locations (varieties) on length, length distribution, strength, and fineness of the ginned lint, 1968*

Variable	Suter-Webb array				Digital Fibrograph		Pressley strength		Micronaire
	Upper quartile length	Mean length	Coefficient of variability	Fibers shorter than ½ inch	2.5% span length	Uniformity ratio	0-in. gage	⅛-in. gage	
	Inches	*Inches*	*Percent*	*Percent*	*Inches*	*Percent*	*1,000 Psi*	*Grams/tex*	*Reading*
Ginning treatment: [1]									
No. 1	1.24	1.03	29.2	7.7	1.13	47.2	91.1	25.0	4.17
No. 2	1.24	1.05	28.0	6.8	1.12	46.3	91.6	24.9	4.17
No. 3	1.23	1.03	28.7	7.2	1.13	46.8	92.7	25.0	4.26
No. 4	1.23	1.03	28.7	7.6	1.12	46.6	91.7	24.9	4.13
No. 5	1.23	1.03	29.4	8.0	1.11	46.2	92.2	24.9	4.18
Significance level[2]	n.s.	n.s.	n.s.	n.s.	.05	n.s.	n.s.	n.s.	n.s.
Duncan 0.10 [3]	n.s.	3,4 <2	2 <1,5	2 <4,1,5	5 <3,1 4,2 <1	5,2 <1	1 <3	n.s.	4 <3
Duncan 0.05 [3]	n.s.	3,4 <2	2 <1,5	2 <5	5,4 <1	5,2 <1	n.s.	n.s.	4 <3
Location and variety: [4]									
No. 1	1.26	1.06	28.7	7.1	1.14	46.2	85.0	23.7	4.05
No. 2	1.20	1.02	27.4	6.5	1.10	47.5	99.3	26.8	4.73
No. 3	1.24	1.03	30.3	8.7	1.13	46.1	91.3	24.3	3.76
Significance level [2]	.01	.05	.01	.01	.01	.05	.01	.01	.01
Duncan 0.10 [3]	2 <3,1	2,3 <1	2 <1 <3	2,1 <3	2 <3,1	3,1 <2	1 <3 <2	1 <3 <2	3 <1 <2
Duncan 0.05 [3]	2 <3,1	2,3 <1	2 <1 <3	2,1 <3	2 <3,1	3,1 <2	1 <3 <2	1 <3 <2	3 <1 <2

[1] See table 1, page 9.

[2] Based on analysis of variance, n.s. = Not significant, 0.05 = Significant at the 5-percent level of probability, and 0.01 = Significant at the 1-percent level of probability.

[3] The means are arrayed in ascending order by treatment number, based on significance at the probability level indicated by Duncan's multiple range tests. The symbol < means "less than."

[4] No. 1 = Vienna, Ga. (Coker 413); No. 2 = Midville, Ga. (Atlas 68); No. 3 = Laurinburg, N.C. (TH-149).

TABLE 21.—*Effect of ginning treatments and locations (varieties) on processing performance, single-strand evaluations, and imperfections (Uster), 1968*

Variable	Strength	Elongation	Strength coefficient of variability	Neps per 1,000 yards	Thick places per 1,000 yards	Low places per 1,000 yards	Yarn irregularity coefficient of variability
	Grams	*Percent*	*Percent*	*Number*	*Number*	*Number*	*Percent*
Ginning treatment: [1]							
No. 1	217	4.7	7.5	342	678	89	20.3
No. 2	215	4.8	8.3	366	735	114	20.7
No. 3	212	4.7	8.3	340	680	88	20.3
No. 4	215	4.7	8.1	378	760	122	20.7
No. 5	215	4.7	8.9	403	788	137	20.9
Significance level [2]	n.s.	n.s.	n.s.	.01	.01	.01	.01
Duncan 0.10 [3]	3 < 1	5,4,3 < 2	1 < 5	3,1 < 2,4 < 5	1,3 < 2 < 5	3,1 < 2 < 5	1,3 < 2 < 5
Duncan 0.05 [3]	n.s.	n.s.	1 < 5	3,1 < 4,5;2 < 5	1,3 < 2 < 5	3,1 < 4 < 5	1,3 < 2,4,5
Location and variety: [4]							
No. 1	210	4.8	7.2	333	766	170	20.6
No. 2	220	4.4	8.3	325	605	82	20.2
No. 3	215	4.9	9.2	439	813	78	21.0
Significance level [2]	.01	n.s.	n.s.	.01	.01	.01	.01
Duncan 0.10 [3]	1 < 3 < 2	n.s.	n.s.	2,1 < 3	2 < 1 < 3	3,2 < 1	2 < 1 < 3
Duncan 0.05 [3]	1 < 3 < 2	n.s.	n.s.	2,1 < 3	2 < 1,3	3,2 < 1	2 < 1,3

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[1] See table 1, page 9.

[2] Based on analysis of variance, n.s. = Not significant, 0.05 = Significant at the 5-percent level of probability, and 0.01 = Significant at the 1-percent level of probability.

[3] The means are arrayed in ascending order by treatment number, based on significance at the probability level indicated by Duncan's multiple range tests. The symbol < means "less than."

[4] No. 1 = Vienna, Ga. (Coker 413); No. 2 = Midville, Ga. (Atlas 68); No. 3 = Laurinburg, N.C. (TH-149).

TABLE 22.—*Drier-inlet temperatures and ambient relative humidity during ginning, 1967*

Ginning-treatment number and replication [1]	Coker 413, Pendleton, S.C.			Atlas 67, Midville, Ga.			TH-149, Laurinburg, N.C.		
	Drier-inlet temp. [2]		Ambient relative humidity	Drier-inlet temp. [2]		Ambient relative humidity	Drier-inlet temp. [2]		Ambient relative humidity
	1st drier	2d drier		1st drier	2d drier		1st drier	2d drier	
	° F.	*° F.*	*Percent*	*° F.*	*° F.*	*Percent*	*° F.*	*° F.*	*Percent*
1A	150	59	46	64	64	53	64	64	40
1B	150	71	47	66	66	54	67	67	38
1C	150	75	48	66	66	56	69	69	36
Average	150	68	47	65	65	54	67	67	38
2A	150	58	57	64	64	55	63	63	42
2B	150	69	48	66	66	52	68	68	36
2C	150	75	48	68	68	50	69	69	36
Average	150	67	51	66	66	52	67	67	38
3A	150	59	52	60	60	54	62	62	44
3B	150	62	50	67	67	50	69	69	36
3C	150	74	48	67	67	55	70	70	36
Average	150	65	50	65	65	53	67	67	39
4A	150	58	54	65	65	58	65	65	40
4B	150	68	50	68	68	50	67	67	38
4C	150	75	48	66	66	58	70	70	36
Average	150	67	51	66	66	55	67	67	38
5A	150	59	56	64	64	57	60	60	45
5B	150	64	51	64	64	54	65	65	39
5C	150	72	48	68	68	51	68	68	37
Average	150	65	52	65	65	54	64	64	40

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[1] 1, 2, 3, 4, and 5 are gin-treatment numbers. A, B, and C are replications.

[2] No artificial heat was used in drying, except in 1st drier on Coker 413 cotton.

TABLE 23.—*Gross weight, grade, staple, and Micronaire of Coker 413 bales in the Southeastern high-quality ginning-spinning study, 1967*

Code No.[1]	Bale weight	Smith-Doxey classification		
		Grade	Staple—32d in.	Micronaire
801A-1	357	LM	34	3.7
801B-1	343	BG/LM Sp. Bk.	33	3.8
801C-1	310	BG/LM Sp. Bk.	33	3.7
801A-2	241	SLM	34	3.3
801B-2	316	LM Lt. Sp.	34	3.3
801C-2	307	LM Sp.	34	3.2
801A-3	359	LM Lt. Sp.	34	3.4
801B-3	337	BG/LM Sp. Bk.	33	3.9
801C-3	320	BG/LM Sp. Bk.	33	3.4
801A-4	349	LM Lt. Sp.	34	3.6
801B-4	313	SLM Sp.	34	3.4
801C-4	336	SLM Sp.	34	3.4
801A-5	321	SLM	35	3.4
801B-5	311	SLM Lt. Sp.	34	3.5
801C-5	308	Mid. Sp.	33	3.3

[1] 801 is the cotton number; A, B, and C are replications; and 1, 2, 3, 4, and 5 are gin-treatment numbers.

TABLE 24.—*Gross weight, grade, staple, and Micronaire of Atlas 67 bales in the Southeastern high-quality ginning-spinning study, 1967*

Code No.[1]	Bale weight	Smith-Doxey classification		
		Grade	Staple—32d in.	Micronaire
802A-1	291	SGO	35	4.1
802B-1	295	SGO	35	4.2
802C-1	269	SGO	35	3.8
802A-2	268	SGO	35	4.3
802B-2	290	LM+	35	4.2
802C-2	296	LM	35	4.2
802A-3	280	LM	35	4.3
802B-3	299	SGO+	35	4.1
802C-3	288	SGO+	35	3.8
802A-4	276	LM	35	4.0
802B-4	285	LM+	34	4.1
802C-4	323	LM+	34	4.0
802A-5	273	SLM	35	4.2
802B-5	267	LM+	35	4.0
802C-5	279	SLM	35	4.2

[1] 802 is the cotton number; A, B, and C are replications; and 1, 2, 3, 4, and 5 are gin-treatment numbers.

TABLE 25.—*Gross weight, grade, staple, and Micronaire of TH–149 bales in the Southeastern high-quality ginning-spinning study, 1967*

Code No.[1]	Bale weight	Smith-Doxey classification		
		Grade	Staple—32d in.	Micronaire
803A–1	283	GO	34	3.9
803B–1	279	GO	34	3.8
803C–1	290	BG	34	3.9
803A–2	261	SGO+	35	4.0
803B–2	263	GO	34	3.9
803C–2	255	BG	34	3.4
803A–3	279	GO	34	3.9
803B–3	269	GO	34	3.7
803C–3	286	BG	34	3.6
803A–4	262	GO	34	4.0
803B–4	269	SGO+	35	3.9
803C–4	250	LM	35	4.0
803A–5	247	LM	35	4.0
803B–5	245	LM	35	4.0
803C–5	240	SGO	35	3.7

[1] 803 is the cotton number; A, B, and C are replications; and 1, 2, 3, 4, and 5 are gin-treatment numbers.

TABLE 26.—*Drier-inlet temperatures and ambient relative humidity during ginning, 1968*

Ginning-treatment number and replication [1]	Coker 413, Vienna, Ga.			Atlas 68, Midville, Ga.			TH-149, Laurinburg, N.C.		
	Drier-inlet temp.		Ambient relative humidity	Drier-inlet temp.		Ambient relative humidity	Drier-inlet temp.		Ambient relative humidity
	1st drier	2d drier		1st drier	2d drier		1st drier	2d drier	
	° F.	*° F.*	*Percent*	*° F.*	*° F.*	*Percent*	*° F.*	*° F.*	*Percent*
1A	150	100	81	150	100	82	70	70	74
1B	150	100	76	150	80	41	150	76	64
1C	150	100	78	150	80	42	88	88	38
Average	150	100	78	150	87	55	103	78	59
2A	150	100	84	150	100	58	72	72	79
2B	150	100	76	150	80	42	150	78	59
2C	150	100	78	150	80	42	86	86	40
Average	150	100	79	150	87	47	103	79	59
3A	150	100	80	150	100	97	68	68	78
3B	150	100	78	150	80	42	150	84	46
3C	150	100	78	150	80	41	88	88	38
Average	150	100	79	150	87	60	102	80	54
4A	150	100	80	150	100	65	66	66	80
4B	150	100	78	150	80	42	150	86	43
4C	150	100	78	150	80	42	88	88	39
Average	150	100	79	150	87	50	101	80	54
5A	150	100	82	150	100	74	68	68	79
5B	150	100	75	150	79	43	150	76	60
5C	150	100	76	150	81	42	87	87	38
Average	150	100	78	150	87	53	102	77	59

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[1] 1, 2, 3, 4, and 5 are gin-treatment numbers; and A, B, and C are replications.

TABLE 27.—*Gross weight, grade, staple, and Micronaire of Coker 413 bales in the Southeastern high-quality ginning-spinning study, 1968*

Code No.[1]	Bale weight	Smith-Doxey classification		
		Grade	Staple—32d in.	Micronaire
901A-1	319	LM Lt. Sp.	36	4.1
901B-1	311	LM Lt. Sp.	36	3.7
901C-1	311	LM Lt. Sp.	35	3.8
901A-2	298	SLM	35	4.0
901B-2	292	SLM	35	4.0
901C-2	291	SLM	35	4.0
901A-3	311	LM Lt. Sp.	36	3.9
901B-3	303	LM Lt. Sp.	36	4.0
901C-3	307	LM Lt. Sp.	35	4.0
901A-4	290	SLM	36	3.9
901B-4	287	SLM	35	3.9
901C-4	286	SLM	36	4.0
901A-5	286	SLM	35	4.0
901B-5	279	SLM	35	4.0
901C-5	300	SLM	35	4.1

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[1] 901 is the cotton number; A, B, and C are replications; and 1, 2, 3, 4, and 5 are gin-treatment numbers.

TABLE 28.—*Gross weight, grade, staple, and Micronaire of Atlas 68 bales in the Southeastern high-quality ginning-spinning study, 1968*

Code No.[1]	Bale weight	Smith-Doxey classification		
		Grade	Staple—32d in.	Micronaire
902A-1	458	GO	34	4.8
902B-1	438	GO	34	4.9
902C-1	525	GO	34	5.0
902A-2	416	SGO	35	4.5
902B-2	411	LM	35	4.8
902C-2	410	SGO	35	4.4
902A-3	454	GO	34	4.7
902B-3	434	SGO	34	4.2
902C-3	446	GO	34	4.7
902A-4	402	LM	35	4.5
902B-4	411	LM	35	4.7
902C-4	408	LM	35	4.9
902A-5	401	LM	35	4.6
902B-5	390	LM	35	4.6
902C-5	389	SLM	35	4.7

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[1] 902 is the cotton number; A, B, and C are replications; and 1, 2, 3, 4, and 5 are gin-treatment numbers.